

REMARKS

Claims 1-6 and 9-20 are pending in the subject application with Claims 1 and 9 in independent form. No claims are amended, withdrawn or cancelled in the present Amendment. Claims 7 and 8 were previously cancelled.

Claims 1-6 and 9-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 4,515,884 to Field et al. (hereinafter “Field et al.”) in view of U.S. Pat. No. 5,846,643 to Badesha et al. (hereinafter “Badesha et al.”) and/or U.S. Pat. No. 4,763,158 to Schlueter (hereinafter “Schlueter”) and also U.S. Pat. Appl. Publ. No. 2002/0146575 to Shudo et al. (hereinafter “Shudo et al.”).

The Examiner contends that Field et al. discloses a fuser member comprising a layer of vulcanized silicone rubber containing thermoconductive particles. However, the Examiner admits that the host matrix of Field et al. is a condensation curable silicone rubber, as opposed to the presently claimed hydrosilylation-curable silicone. To address this deficiency of Field et al., the Examiner relies on Badesha et al. and/or Schlueter to illustrate that hydrosilylation-curable silicone rubbers are known to be used in a similar capacity, i.e., are generally regarded as being equivalent hosts into which conductive particles are incorporated. To support his conclusion, the Examiner has cited several portions of the detailed description of Schlueter relating to the hydrosilylation-curable silicone rubber composition disclosed therein. However, the Applicants respectfully point out that although Schlueter may disclose a hydrosilylation-curable silicone rubber composition, the Examiner has not cited any portion of Schlueter relating to conductive particles to establish that Schlueter teaches that such hydrosilylation-curable silicone rubber

compositions are equivalent hosts as other silicones. In fact, as set forth in greater detail below, not only does Schlueter fail to teach that hydrosilylation-curable silicone rubber compositions are suitable as hosts for conductive particles, but Schlueter teaches away from such a combination.

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed.Cir.1994). As the Examiner is aware, “[a] prior art reference that ‘teaches away’ from the claimed invention is a significant factor to be considered in determining obviousness.” MPEP § 2141.02. A teaching away of the claimed invention is a significant factor in determining obviousness even in view of *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727 (2007). More specifically, the Court in *KSR* stated that “when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious.” *Id.* at 1740 (citing *United States v. Adams*, 383 U.S. 39, 51-52 (1966)). In particular, column 3, lines 23-53 of Schlueter states:

“Typically fuser members such as the fuser roll have a thin elastomeric surface layer applied to a metallic cylindrical sleeve such as aluminum which is heated by a heating element disposed in the center of the aluminum sleeve. Since the fusing temperature is of the order of about 400° F, the design of the fuser roll is such as to minimize power requirements to maintain the fusing temperature at the surface of the elastomer layer. Accordingly, the elastomer layer is generally designed to be as thin as possible and typically has substantial quantities of thermally conductive filler such as alumina, iron oxide and others added thereto. The thermally conductive filler increases the thermal conductivity of the elastomer layer thereby minimizing the thermal barrier to heat radiating from inside the fuser member to the outermost layer of the elastomer and reducing the power requirements. While the fillers such as alumina and silica are effective in

increasing thermal conductivity of the elastomer layer since these particulate materials are relatively high surface energy materials when incorporated in the elastomer layer, the release properties of the elastomer layer are gradually degraded with continuing use. As a result, the hot offset temperature is reduced and the fusing latitude may also be reduced with time.

(emphasis added). As such, Schlueter teaches that it is undesirable to utilize thermally conductive fillers, such as alumina and iron oxide, in elastomeric layers because such thermally conductive fillers have an undesirable impact on the release properties of the elastomeric layer, thus reducing the hot offset temperature and fusing latitude. Therefore, upon a full reading of Schlueter, there is no reason whatsoever that one of skill in the art would take the hydrosilylation-curable silicone rubber composition disclosed therein and combine it with thermally conductive fillers in view of the fact that Schlueter expressly teaches that such thermally conductive fillers impart the resulting elastomeric layer with undesirable properties.

The Examiner relies upon Badesha for the same purposes as Schlueter, i.e., to attempt to show that hydrosilylation-curable silicone rubber compositions are suitable hosts into which thermally conductive particles are incorporated. Notably, the Examiner has not cited any portion of Badesha relating to conductive particles such that Badesha teaches that such hydrosilylation-curable silicone rubber compositions are equivalent hosts as other silicones. Rather, Badesha is directed toward an elastomeric layer including a leaf or sheet like laminated phyllosilicate mineral. Moreover, the Applicants respectfully point out that the background section of Badesha incorporates Schlueter by reference in its entirety (see column 2, line 44-46 of Badesha). As such, the teaching away present in the background of Schlueter, which is described above, is equally applicable to Badesha. Therefore, upon a full reading of Badesha,

there is no reason that one of skill in the art would take the hydrosilylation-curable silicone rubber composition disclosed therein and combine it with thermally conductive fillers in view of the fact that Badesha incorporates the portion of Schlueter which expressly teaches that such thermally conductive fillers impart the resulting elastomeric layer with undesirable properties.

The Examiner further contends that, aside from the differences in the type of silicone resin disclosed, i.e., condensation curable silicone rubber versus hydrosilylation curable silicone rubber, Field et al. discloses a composition that mirrors that of the subject invention. However, the Applicants respectfully point out that Field et al. fails to teach the use of cerium oxide micropowder, cerium hydroxide micropowder, or cerium-containing heteroorganosilane, as presently claimed as component (D). As such, Field et al. clearly fails to teach components (A), (D), (E) and (F) of the present claims.

To address the failure of Field et al. to teach the use of cerium oxide micropowder, cerium hydroxide micropowder, or cerium-containing heteroorganosilane, as presently claimed as component (D) in the subject application, the Examiner relies upon Shudo et al. and contends that Shudo et al. discloses that it is known to add cerium oxide in amounts consistent with those claimed in the subject application. However, the Applicants respectfully point out that the only mention of cerium oxide in the entire disclosure of Shudo et al. is in a Markush group which merely sets forth a laundry list of non-reinforcing fillers, coloring agents and reagents that may optionally be included in the composition of Shudo et al. Notably, Shudo et al. does not provide any teachings with respect to the relative amounts of any of these non-reinforcing fillers, coloring agents or reagents, including the relative amounts of cerium oxide. As such, contrary

to the Examiner's position, Shudo et al. does not disclose that it is known to add cerium oxide in amounts consistent with those claimed in the subject application.

In addition, as the Examiner is aware, combining known prior art elements is not sufficient to render the claimed invention obvious if the results would not have been predictable to one of ordinary skill in the art. *United States v. Adams*, 383 U.S. 39, 51-52, 148 USPQ 479, 483-84 (1966). Further, the mere fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the results would have been predictable to one of ordinary skill in the art. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1396 (2007). For the reasons set forth below, the Applicants respectfully submit that the subject invention would not have been predictable to one of skill in the art upon a full reading of Shudo et al. relative to the unexpected physical properties obtained via the combination of claimed Components (B), (C) and (D) in the subject application.

In particular, Table 1b of the subject application sets forth 6 Comparative Examples. Comparative Examples 2, 4 and 6 do not include iron oxide micropowder, or claimed Component (C) of the subject application. Comparative Examples 3 and 4 do not include cerium oxide micropowder, cerium hydroxide micropowder, or cerium-containing heteroorganosilane, or claimed Component (D) of the subject application. Thus, Comparative Example 2 includes cerium oxide micropowder but not iron oxide micropowder, and Comparative Example 3 includes iron oxide micropowder but not cerium oxide micropowder. Examples 1-5 are identical to these Comparative Examples with the exception that Examples 1-5 include both of claimed Components (C) and (D). Tables 5 and 6 set forth the adherence of

the compositions formed in each respective Example and Comparative Example to aluminum panel and to fluororesin, respectively. Notably, the compositions of Examples 1-5, which include both of claimed Components (C) and (D), had excellent adherence to both aluminum and fluororesin, even after 480 hours (see Tables 5 and 6). Conversely, the compositions of Comparative Examples 2, 3, 4 and 6, which do not include both of claimed Components (C) and (D), had an adherence to aluminum panel which was undesirable initially, let alone after 480 hours, as measured by the cohesive failure ratio (see Table 5). Similarly, the compositions of these Comparative Examples had an undesirable adherence to fluororesin after 480 hours, with Comparative Examples 2, 4 and 6 having an undesirable adherence to fluororesin initially as well (see Table 6). The Applicants respectfully submit that, upon a full reading of Field et al. in view of Badesha et al. and/or Schlueter and also Shudo et al., one of skill in the art would have no reason whatsoever to expect the excellent physical properties obtained from compositions including claimed Components (A)-(F), especially in view of the fact that utilizing iron oxide micropowder but not cerium oxide micropowder, or vice versa, resulted in undesirable properties (as exemplified by Comparative Examples 2 and 3 relative to Examples 1-5 in the subject application).

In view of the foregoing, the Applicants respectfully submit that independent claims 1 and 9, as well as claims 2-6 and 10-20 which depend from independent claims 1 and 9, respectively, are both novel and non-obvious over the prior art. As such, the Applicants submit that the claims are in condition for allowance, and such allowance is respectfully requested.

This response is timely filed; thus, it is believed that no further fees are presently due. However, if necessary, the Commissioner is authorized to charge Deposit Account No. 08-2789 in the name of Howard & Howard Attorneys PLLC for any additional fees or to credit the account for any overpayment.

**Respectfully submitted,
HOWARD & HOWARD ATTORNEYS PLLC**

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Date

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